

National Climatic Data Center

DATA DOCUMENTATION

FOR

DATASET 9507 (DSI-9507)

Department of Energy Storm Occurrences

December 22, 2003

National Climatic Data Center
151 Patton Ave.
Asheville, NC 28801-5001 USA

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1. Abstract: The National Climatic Data Center (NCDC) has, in archive, a historical digital database that contains information on synoptic storms and other climatological factors that affect coastlines and may be used by a vector-based ARC/INFO geographic information system (GIS), a raster GIS, or a non-GIS database. The data were extracted, compiled, or derived from publications and records obtained from the National Oceanic Atmospheric Administration (NOAA), U.S. Navy, foreign government agencies, universities, and other miscellaneous data sources.

The dataset consists of the following data groups: annual probabilities of occurrence of tropical storms and hurricanes for coastal areas of the U.S., Canada, and Bermuda by 1 X 1 degree cells; annual probabilities of occurrence of tropical storms, hurricanes, super typhoons (winds 67 meters/second or greater), and mean forward velocities of tropical cyclones (without regard to tropical cyclone intensity) for the world by 5 X 5 degree cells; number of hurricanes strikes for the U.S. Atlantic and Gulf coasts by state and Saffir-Simpson hurricane category; mean monthly and annual number of extratropical cyclogenesis and cyclone occurrences for the Northern Hemisphere by 5 X 5 degree cells; mean and/or relative number of cyclones (without regard to cyclone type) for January, July, and the year for the world by 5 X 5 degree cells; mean number of hours of cyclone occurrence (without regard to cyclone type) for January, July, and the year for the Southern Hemisphere by 5 X 5 degree cells; mean number of polar lows (polar air cloud vortices) per winter month for the North Pacific Ocean and Southern Hemisphere by 5 X 5 degree cells; derived index of the influence of winds on coastlines in the African, Asian, and Australian monsoon regions by 1 X 1 degree cells; and mean annual sea-ice concentrations for Alaskan and U.S. coastal areas by 1 X 1 degree cells.

2. Element Names and Definitions:

Contents of the Magnetic Tape

The following lists the files distributed on the magnetic tape by Carbon Dioxide Information Analysis Center (CDIAC). These files are also available on IBM-formatted floppy diskette as DOS ASCII text files.

File number	Description	Logical records	Block size	Record length
1	General descriptive file	915	8000	80
2	FORTRAN IV retrieval program to read and print File 5	33	8000	80
3	SAS code™ to read and print File 5	5	8000	80
4	Annual probabilities	18426	8000	80

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	of occurrence of tropical storms and hurricanes for coastal areas of the United States, Canada, and Bermuda by 1° x 1° grid cells (ARC/INFO™ export file)			
5	Annual probabilities of occurrence of tropical storms and hurricanes for coastal areas of the United States, Canada, and Bermuda by 1° x 1° grid cells (flat ASCII file)	64801	8000	80
6	FORTAN IV retrieval program to read and print File 9	33	8000	80
7	SAS™ code to read and print File 9	6	8000	80
8	A. Annual probabilities of occurrence of tropical storms, hurricanes, and super typhoons for the world by 5° x 5° grid cells. B. Mean forward velocities of tropical cyclones for the world by 5° x 5° grid cells (ARC/INFO™ export file)	32025	8000	80
9	A. Annual probabilities of occurrence of tropical storms,	2593	8000	80

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	hurricanes, and super typhoons for the world by 5° x 5° grid cells. B. Mean forward velocities of tropical cyclones for the world by 5° x 5° grid cells (flat ASCII file).			
10	FORTTRAN IV retrieval program to read and print File 13	33	8000	80
11	SAS™ code to read and print File 13	6	8000	80
12	Number of hurricane strikes for the U.S. Atlantic and Gulf coasts by state and Saffir-Simpson category (ARC/INFO™ export file).	1227	8000	80
13	Number of hurricane strikes for the U.S. Atlantic and Gulf coasts by state and Saffir-Simpson category (flat ASCII file)	43	8000	80
14	Vector coordinate file of U.S. Atlantic and Gulf states, and state subdivisions (flat ASCII file)	1312	8000	80
15	FORTTRAN IV retrieval program to read and print File 18	49	8000	80
16	SAS™ code to read and print	11	8000	80

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	File 18			
17	A. Mean number of extratropical cyclogenesis by month and year for the Northern Hemisphere by 5° x 5° grid cells. B. Mean number of extratropical cyclone occurrences by month and year for the Northern Hemisphere by 5° x 5° grid cells (ARC/INFO™ export file).	42562	8000	80
18	A. Mean number of extratropical cyclogenesis by month and year for the Northern Hemisphere by 5° x 5° grid cells. B. Mean number of occurrences by month and year for the Northern Hemisphere by 5° x 5° grid cells (flat ASCII file).	5186	6600	132
19	FORTRAN IV retrieval program to read and print File 22	33	8000	80
20	SAS™ code to read and print File 22	6	8000	80
21	Mean number of polar lows (polar air cloud vortices) per winter	34077	8000	80

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	month for the North Pacific Ocean and Southern Hemisphere by 5° x 5° grid cells (ARC/INFO™ export file).			
22	Mean number of polar lows (polar air cloud vortices) per winter month for the North Pacific Ocean and Southern Hemisphere by 5° x 5° grid cells (flat ASCII file)	2593	8000	80
23	FORTTRAN IV retrieval program to read and print File 26	48	8000	80
24	SAS™ code to read and print FILE 26	10	8000	80
25	A. Mean and/or relative number of cyclone occurrences for January, July, and the year for the world by 5° x 5° grid cells. B. Mean number of hours of cyclone of cyclone occurrence for January, July, and the year for the Southern Hemisphere by 5° x 5° grid cells (ARC/INFO™ export file).	47969	8000	80
26	A. A. Mean and/or relative number of	2593	6600	132

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	cyclone occurrences for January, July, and the year for the world by 5° x 5° grid cells. B. Mean number of hours of cyclone occurrence for January, July, and the year for the Southern Hemisphere by 5° x 5° grid cells (flat ASCII file).			
27	FORTTRAN IV retrieval program to read and print File 30	32	8000	80
28	SAS™ code to read and print File 30	5	8000	80
29	Index of the influence of winds on coastlines I the African, Asian, and Australian monsoon regions by 1° x 1° grid cells (ARC/INFO™ export file).	21449	8000	80
30	Index of the influence of winds on coastlines I the African, Asian, and Australian monsoon regions by 1° x 1° grid cells (flat ASCII file).	64801	8000	80
31	FORTTRAN IV retrieval program to read and print File 34	32	8000	80

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32	SAS™ code to read and print File 34	5	8000	80
33	Mean annual sea-ice concentrations for Alaskan and U.S. Atlantic coastal areas by 1° x 1° grid cells (ARC/INFO™ export file).	5303	8000	80
34	Mean annual sea-ice concentrations for Alaskan and U.S. Atlantic coastal areas by 1° x 1° grid cells (flat ASCII file).	64801	8000	80
Total records		413,023		

1. Tapes are 9 track 6250 BPI with all characters written in EBCDIC unless otherwise specified by the requester.

2. All records are stored in a fixed block record format.

3. ARC/INFO™ export files are coverage's converted to flat ASCII, fixed block, files for data transfer purposes. You must use the IMPORT command in ARC/INFO to enter these files into your system.

4. SAS™ is a registered trademark of the SAS Institute, Inc., Cary NC 27511-8000

5. ARC/INFO™ is a registered trademark of the Environmental Systems Research Institute, Inc., Redlands, CA 92372.

Descriptive File of the Tape

Data Group TC10: Annual probabilities of occurrence of tropical storms and hurricanes for coastal area of the United States, Canada, and Bermuda by 1° x 1° grid cells.

The variables in data group TC10 are listed as they appear in TC10.ASC (File 5) in Table 8.

Table 8. Variable formats for TC10.ASC (File 5)

Variable name	Column start	Column end	Variable type	Variable description
Area	1	13	Real	System variable -

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				area of each grid cell in map units
Perimeter	14	26	Real	System variable - perimeter of each grid cell in map units
TC10	27	32	Integer	System variable-internal grid cell identifier
TC10ID	33	38	Integer	System variable-external grid cell identifier
TS	39	47	Real	Data variable-annual probability of occurrence of tropical storms for each grid cell
TY	48	56	Real	Data variable-annual probability of occurrence of hurricanes for each grid cell

Flags are used in data group TC10 for data variable TS and TY under the following circumstances: (1) when the data record for a given grid cell provided what was believed to be a false-zero value, and (2) to indicate areas where tropical cyclones are not known to occur. All flags have data values greater than 100 and are defined as follows:

200.00 - Indicate that no tropical cyclone activity has been observed for the given data variable in the given grid cell during the period of record; however, the grid cell may be an area of rare or occasional tropical cyclone activity for the data variable at hand.

999.00 - Indicates that tropical cyclones of at least tropical storm intensity (sustained winds greater than 17.5 m/s) are not known to occur in the given grid cell (i.e., 999 is equivalent to zero).

Data Group TC50: Annual probabilities of occurrence of tropical storms, hurricanes, and super typhoons for the world by 5° x 5° grid cells and mean forward velocities of tropical cyclones for the world by 5° x 5° grid cells.

The variables in data group TC50 are listed as they appear in TC50.ASC (File 9) in Table 9.

Table 9 Variable formats for TC50.ASC (File 9)

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Variable name	Column start	Column end	Variable type	Variable description
Area	1	13	Real	System variable - area of each grid cell in map units
Perimeter	14	26	Real	System variable - perimeter of each grid cell in map units
TC50	27	32	Integer	System variable-internal grid cell identifier
TC50ID	33	38	Integer	System variable-external grid cell identifier
TS	39	47	Real	Data variable-annual probability of occurrence of tropical storms for each grid cell
TY	48	56	Real	Data variable-annual probability of occurrence of hurricanes for each grid cell
STY	57	65	Real	Data variable-annual probability of occurrence of super typhoons for each grid cell.
TCV	66	74	Real	Data variable-mean forward velocity of tropical cyclones (without regard to tropical cyclone intensity) for each grid cell in meters per second

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Flags have been added to the data values of data group TC50 for data variables TS, TY, STY, and TCV under the following circumstances: (1) when the data record used for a given cell provided what was believed to be a false-zero value, and (2) to indicate areas where tropical cyclones are not known to occur. All flags have data values greater than 100. Each is explained in the following:

200.10 to 299.90 - Indicates that no tropical cyclone activity has been observed for the given data variable in the given grid cell during the period of record; however, the grid cell may represent an area of rare or occasional activity for the data variable at hand.

999.00 - Indicates that tropical cyclones of at least tropical storm intensity are not known to occur in the given grid cell (i.e., 999 is equivalent to zero).

A 200 digit in a data value for data variables TS, TY, and STY indicates that the remaining digits are an estimate of the probability of occurrence in percent for the given data variable. To obtain the estimated percent likelihood of occurrences in the given grid cell, subtract 200.

A 200 digit in a data for data variable TCV indicates that the remaining digits are an estimate of the mean forward velocity of tropical cyclones in meters per second. To obtain the estimate mean forward velocity of tropical cyclones for data variable TCV for a given grid cell, subtract 200.

Data Group HCSTATE: Number of hurricane strikes for the U.S. Atlantic and Gulf Coasts by state and Saffir-Simpson category

The variables in data group HCSTATE are listed as they appear in HCSTATE.ASC (File 13) in Table 10.

Table 10 Variable formats for HCSTATE.ASC (File 13)

Variable name	Column start	Column end	Variable type	Variable description
Area	1	10	Real	System variable - area of each grid cell in map units
Perimeter	11	23	Real	System variable - perimeter of each grid cell in map units
HCSTATE	24	29	Integer	System variable-internal grid cell identifier
HCSTATEID	30	38	Integer	System variable-external grid cell identifier

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C1	39	48	Real	Data variable-number of hurricane centers of Saffir-Simpson Class 1 that have crossed a given state or substate coastline during the period of record
C2	49	53	Real	Data variable-number of hurricane centers of Saffir-Simpson Class 2 that have crossed a given state or substate coastline during the period of record
C3	54	58	Real	Data variable-number of hurricane centers of Saffir-Simpson Class 3 that have crossed a given state or substate coastline during the period of record
C4	59	63	Real	Data variable-number of hurricane centers of Saffir-Simpson Class 4 that have crossed a given state or substate coastline during the period of record
C5	64	68	Real	Data variable-number of hurricane centers of

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				Saffir-Simpson Class 5 that have crossed a given state or substate coastline during the period of record
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Table 11 lists the geographic name and polygon ID for each polygon in this data group.

Table 11 Geographic names of each polygon in data group HCSTATE (Files 12, 13, and 14)

HCSTATE-ID	Location	HCSTATE-ID	Location
1	Maine	2	N. Hampshire
3	New York	4	Massachusetts
5	Pennsylvania	6	Connecticut
7	Rhode Island	8	New Jersey
9	New York	10	Delaware
11	Maryland	12	Virginia
13	Virginia	14	N. Carolina
15	N. Carolina	16	Northern Texas
17	N. Carolina	18	N. Carolina
19	S. Carolina	20	Alabama
21	Mississippi	22	Georgia
23	Louisianan	24	Central Texas
25	NW Florida	26	NE Florida
27	NW Florida	28	NE Florida
29	Northern Texas	30	NE Florida
31	Southern Texas	32	NE Florida
33	NE Florida	34	SE Florida
35	SE Florida	36	SE Florida
37	Central Texas	38	SW Florida
39	SW Florida	40	Southern Texas
41	Southern Texas	42	SW Florida

Table 12 displays an example of the format of the data within HCSTATE.BNA (File 14), which contains the vector boundaries for the data within this group.

Table 12 Sample listing form the vector coordinate file HCSTATE.BNA (File 14)

Format: Polygon ID, number of vertices in polygon longitude, latitude.	
"1",59	
-71.088,45.3014	Point 1
-70.6407,45.4194	
-70.5033,45.6806	
-70.2455,45.9355	
-70.279,46.1999	
-70.0352,46.4806	
-69.8728,46.8154	

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-69.5779,47.1142	
-69.0446,47.4105	
-69.0446,47.2721	Point 10
...	
-71.088,45.3014	Point 59, closes program
"2",16	Point 1
...	

No flags are added to the data variables of data group HCSTATE. However, data values for the five data variables are not directly comparable between different polygons. This results from different coastal lengths represented by each of the state and substate polygons.

Twenty-four states and substates represent separate data entities in this data group. These 24 entities, however, are described by 42 polygons in the data group. The additional polygons are inlands and/or fragments of various states or substates, which are separated from the main body of the state or substate to which they belong. Each island polygon contains the same data values as the state or substate of which it is a part.

Data Group XCNORTH: Mean number of extratropical cyclogenesis by month and year for the northern hemisphere by 5° x 5° grid cells and the mean number of extratropical cyclone occurrences by month and year for the northern hemisphere by 5° x 5° grid cells.

The variables in data group XCNORTH are listed as they appear in XCNORTH.ASC (File 18) in Table 13.

Table 13 Variable formats for XCNORTH.ASC (File 18)

Variable name	Column start	Column end	Variable type	Variable description
Area	1	12	Real	System variable - area of each grid cell in map units
Perimeter	13	24	Real	System variable - perimeter of each grid cell in map units
XCNORTH	25	29	Integer	System variable-internal grid cell identifier
XCNORTHID	30	34	Integer	System variable-external grid cell identifier
CGJA	35	42	Real	Data variable-mean number of extratropical cyclogenesis

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				per January for each grid cell
CFJA	43	50	Real	Data variable-mean number of extratropical cyclone occurrences per January for each grid cell
CGFE	51	58	Real	Data variable-mean number of extratropical cyclogenesis per February for each grid cell
CFFE	59	66	Real	Data variable-mean number of extratropical cyclone occurrences per February for each grid cell
CGMR	67	74	Real	Data variable-mean number of extratropical cyclogenesis per March for each grid cell
CFMR	75	82	Real	Data variable-mean number of extratropical cyclone occurrences per March for each grid cell
CGAP	83	90	Real	Data variable-mean number of extratropical cyclogenesis per April for each grid cell
CFAP	91	98	Real	Data variable-mean number of extratropical cyclone occurrences per April for each grid cell
CGMY	99	106	Real	Data variable-mean number of extratropical cyclogenesis

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				per May for each grid cell
CFMY	107	114	Real	Data variable-mean number of extratropical cyclone occurrences per May for each grid cell
CGJN	115	122	Real	Data variable-mean number of extratropical cyclogenesis per June for each grid cell
The following line reads				
CFJN	1	8	Real	Data variable-mean number of extratropical cyclone occurrences per June for each grid cell
CGJL	9	16	Real	Data variable-mean number of extratropical cyclogenesis per July for each grid cell
CFJL	17	24	Real	Data variable-mean number of extratropical cyclone occurrences per July for each grid cell
CGAG	25	32	Real	Data variable-mean number of extratropical cyclogenesis per August for each grid cell
CFAG	33	40	Real	Data variable-mean number of extratropical cyclone occurrences per August for each grid cell
CGSP	41	48	Real	Data variable-mean number of extratropical cyclogenesis per September for each grid cell

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CFSP	41	48	Real	Data variable-mean number of extratropical cyclone occurrences per September for each grid cell
CGOB	57	64	Real	Data variable-mean number of extratropical cyclogenesis per October for each grid cell
CFOB	65	72	Real	Data variable-mean number of extratropical cyclone occurrences per October for each grid cell
CGNV	73	80	Real	Data variable-mean number of extratropical cyclogenesis per November for each grid cell
CFNV	81	88	Real	Data variable-mean number of extratropical cyclone occurrences per November for each grid cell
CGDC	89	96	Real	Data variable-mean number of extratropical cyclogenesis per December for each grid cell
CFDC	97	104	Real	Data variable-mean number of extratropical cyclone occurrences per December for each grid cell
CGAN	105	112	Real	Data variable-mean number of extratropical

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				cyclogenesis per year for each cell
CFAN	113	120	Real	Data variable-mean number of extratropical cyclone occurrences per year for each grid cell

Flags are added to the data value of data group XCNORTH under the following circumstances: (1) to indicate Northern Hemisphere "tropical" zones and (2) to indicate the unavailability of data. Flagged data always have values greater than 100. The flags are defined as follows:

888.00 - Indicates that the data value is referenced to a 5° x 5° grid cell that is located between 0° and 20° North latitude. Polygons within this area are generally tropical in nature. As a result, extratropical cyclone activity is either rare or nonexistent.

999.00 - This data value indicated that no data are available for the given grid cell.

This data group has not been significantly corrected for latitudinal differences in the sizes of 5° x 5° grid cells of latitude-longitude. Extratropical cyclone occurrence data variables (those beginning with CF) have received no area corrections. The extratropical cyclogenesis data variable (those beginning with CG) have been slightly corrected for latitudes above 65° North.

Data Group POLARLOW: Mean number of polar lows per winter month for the North Pacific Ocean and Southern Hemisphere by 5° x 5° grid cells.

The variables in data group POLARLOW are listed as they appear in POLARLOW.ASC (File 22) in Table 14.

Table 14 Variable formats for POLARLOW.ASC (File 22)

Variable name	Column start	Column end	Variable type	Variable description
Area	1	13	Real	System variable - area of each grid cell in map units
PERIMETER	14	26	Real	System variable - perimeter of each grid cell in map units
PLOW	27	32	Integer	System variable-internal grid cell identifier

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PLOWID	33	38	Integer	System variable-external grid cell identifier
COMMA	39	47	Real	Data variable-mean number of comma-form polar lows per winter month for each grid cell
SPIRAL	48	56	Real	Data variable-mean number of polar lows per winter month (comma-and spiral-form) for each grid cell

The following flags are added to the data Values group POLARLOW in order to (1) indicate area of possible rare polar-low occurrence and (2) indicate the unavailability of data. Flagged data always have been greater than 100. The two types of flags in the data values are explained below:

200.00 - Indicates that polar-low occurrence is a possibility in the given Grid cell; however, the period of record was not sufficient to indicate polar-low activity. This flag was used only for data variable POLARLOW.

999.00 - Indicates that data on the occurrence of polar lows are not available for the given grid cell.

The polar-low climatology here describes the occurrences of polar lows in all formative and most mature stages of development (polar-low types 6, 7, 21, and 22 as used in the data sources. Polar lows in the decaying stage of their life cycles are not included in this climatology.

Data Group LOWPC: Mean and /or relative number of cyclones for January, July, and the year for the world by 5° x 5° grid cells and the mean number of hours of cyclone occurrences for January, July, and the year for the Southern Hemisphere by 5° x 5° grid cells

The variables in data group LOWPC are listed as they appear in LOWPC.ASC (File 26) in Table 15.

Table 15 Variable formats for LOWPC.ASC (File 26)

Variable name	Column start	Column end	Variable type	Variable description
Area	1	12	Real	System variable - area of each grid cell in map units
Perimeter	13	25	Real	System variable - perimeter of

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				each grid cell in map units
LOWPC	26	31	Integer	System variable- internal grid cell identifier
LOWPCID	32	37	Integer	System variable- external grid cell identifier
ZONE	38	43	Integer	Data variable- the climate zone to which a given grid cell is assigned (i.e., 1 = tropical, 2 - extratropical)
LOWNJA	44	52	Real	Data variable- the mean number of cyclone occurrences per January for each grid cell (Northern Hemisphere)
LOWNJL	53	61	Real	Data variable- the mean number of cyclone occurrences per July for each grid cell (Northern Hemisphere)
LOWNAN	62	70	Real	Data variable- the mean number of cyclone occurrences per year for each grid cell (Northern Hemisphere)
LOWSJA	71	79	Real	Data variable- the mean number of cyclone occurrences per January for each grid cell (Southern Hemisphere outside Australian Region)
LOWSJL	80	88	Real	Data variable- the mean number of cyclone

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				occurrences per July for each grid cell (Southern Hemisphere outside Australian Region)
LOWSAN	89	97	Real	Data variable-the mean number of cyclone occurrences per year for each grid cell (Southern Hemisphere outside Australian Region)
LOW2JA	98	106	Real	Data variable-the mean number hours of cyclone occurrences per January for each grid cell (Southern Hemisphere outside Australian Region)
The following line reads:				
LOWS2JL	1	8	Real	Data variable-the mean number hours of cyclone occurrences per July for each grid cell (Southern Hemisphere outside Australian Region)
LOWS2AN	9	17	Real	Data variable-the mean number hours of cyclone occurrences per year for each grid cell (Southern Hemisphere outside Australian Region)

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LOWAJA	18	26	Real	Data variable- the mean number cyclone occurrences per January for each grid cell (Australian Region)
LOWAJL				Data variable- the mean number cyclone occurrences per July for each grid cell (Australian Region)
LOWAAN				Data variable- the mean number cyclone occurrences per year for each grid cell (Australian Region)
LOWA2JA				Data variable- the mean number hours of cyclone occurrences per January for each grid cell(Australian Region)
LOWA2JL				Data variable- the mean number hours of cyclone occurrences per July for each grid cell (Southern Hemisphere outside Australian Region)
LOWA2AN				Data variable- the mean number hours of cyclone occurrences per year for each grid cell (Southern Hemisphere outside Australian

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CYCJA				Region) Data variable- statistically standardized data value calculated by subtracting the given data source mean number of cyclones centers present per 5° x 5° grid cell per January from the mean number of cyclone centers present in a given 5° x 5° grid cell per January and then dividing by the standard deviation of the given data source mean number of cyclone centers present per 5° x 5° grid cell per January (i.e., the global distribution of cyclones in January)
CYCJL	81	89	Real	Data variable- statistically standardized data value calculated by subtracting the given data source mean number of cyclones centers present per 5° x 5° grid cell per July from the mean number of cyclone centers present in a given 5° x 5° grid cell per July and then dividing by the

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				standard deviation of the given data source mean number of cyclone centers present per 5° x 5° grid cell per July (i.e., the global distribution of cyclones in July)
CYCLONE	90	98	Real	Data variable-statistically standardized data value calculated by subtracting the given data source mean number of cyclones centers present per 5° x 5° grid cell per year from the mean number of cyclone centers present in a given 5° x 5° grid cell per year and then dividing by the standard deviation of the given data source mean number of cyclone centers present per 5° x 5° grid cell per year (i.e., the annual global distribution of cyclones)

The following flag is added to the data values of data group LOWPC to aid in the data interpretation.

999.00 - Indicates that data for the given data variable are not available for the given grid cell.

Data variables CYCJA, CYCJL, and CYCLONE are expressed in deviations from the mean, where the mean and standard deviation for each data source was obtained

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and used to convert the values in each grid cell into a standardized value. The standardized data values for each 5° x 5° grid cell in each data region were then used to form the three global data variables for January, July, and the year (see appendix A for a description of the methods used in obtaining the global data variables).

Comparison of the number of cyclones and/or cyclonicity data between area using different data sources should be undertaken with caution. Although data variables CYCJA, CYCJL, and CYCLONE adequately standardize the data sources for most uses, differences in data analysis and presentation in the original data sources cannot be entirely ignored. Two particular areas of caution concerning data source differences are (1) the number of cyclone observations used in obtaining the original cyclone frequencies and (2) the resolution of the isobar analysis used (i.e., 4-hPa, 5-hPa, or 10-hPa).

Data Group MONSOON: Index of the influence of winds on coastlines in the African, Asian and Australian monsoon regions by 1° x 1° grid cells.

The variables in data group MONSOON are listed as they appear in MONSOON.ASC (File 30) in Table 16.

Table 16 Variable formats for MONSOON.ASC (File 30)

Variable name	Column start	Column end	Variable type	Variable description
AREA	1	13	Real	System variable- area of each grid cell in map units
PERIMETER	14	26	Real	System variable- perimeter of each grid cell in map units
MON	27	32	Integer	System variable- internal grid cell identifier
MONID	33	38	Integer	System variable- external grid cell identifier
MONSOON	39	43	Real	Data variable- a numeric index of the relative influence of onshore winds on coastlines of monsoon regions for each grid cell

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The following flag is added to the data values of data group MONSOON to aid in data interpolation.

999 - Indicates that data for the given variable are not available for the given grid cell.

Data group SEAICE: Mean annual sea-ice concentration for Alaskan and U.S. Atlantic Coastal area by 1° x 1° grid cells.

The variable in data group SEAICE are listed as they appear in SEAICE.ASC (File 34) in Table 17.

Table 17 Variable formats for SEAICE.ASC (File 34)

Variable name	Column start	Column end	Variable type	Variable description
AREA	1	13	Real	System variable- area of each grid cell in map units
PERIMETER	14	26	Real	System variable- perimeter of each grid cell in map units
SEA	27	32	Integer	System variable- internal grid cell identifier
SEAID	33	38	Integer	System variable- external grid cell identifier
ICE	39	43	Real	Data variable- mean annual concentration of sea ice in percent for each grid cell

Calculations of sea-ice concentrations are limited to a 1° x 1° grid cells of latitude-longitude that contain significant U.S. coastlines. Therefore, the flat ASCII file (File 34) of data group SEAICE has only 297 grid cells out of the 64,800 possible that contain real data. Grid cells not containing real data values are flagged with the following data value:

99.0 - Indicates that no data value for sea-ice concentration has been calculated for the given grid cell.

3. **Start Date:** 18990101

4. **Stop Date:** 19901231

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5. **Coverage:**

- a. Southernmost Latitude: -90.0S
- b. Northernmost Latitude: 90.0N
- c. Westernmost Longitude: -180.0W
- d. Easternmost Longitude: 180.0E

6. **How to Order Data:**

Ask NCDC's Climate Services about the cost of obtaining this data set.
Phone: 828-271-4800
FAX: 828-271-4876
E-mail: NCDC.Orders@noaa.gov

7. **Archiving Data Center:**

Archive Branch
National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801

8. **Technical Contact:**

National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801

9. **Known Uncorrected Problems:** None.

10. **Quality Statement:**

11. **Essential Companion Datasets:**

12. **References:**

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Appendix A
Techniques used to compile data groups and variables

Because of the large number of data sources used, methods employed to obtain the 61 data variables in this NDP vary widely. Figure A-1 lists the eight data groups and the data variables associated with each. More information about specific procedures used in the derivation of data variables of each individual data group can be found in the Active Archives Branch.

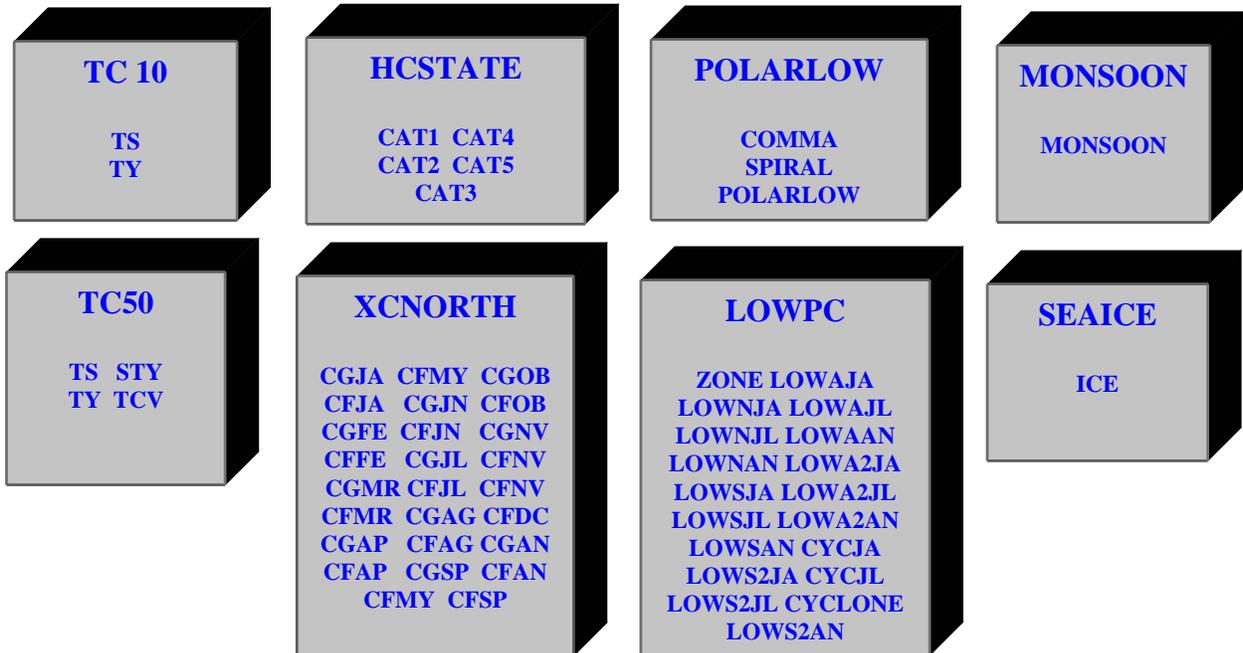


Fig. A-1. NDP-035 data group names and associated data variable names.

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Table A-1 Data groups of NDP-035; each data group is described by its name and contents.

Name	Description of Contents
TC10	Annual probabilities of occurrence of tropical storms and hurricanes for coastal areas of the United States, Canada, and Bermuda by 1° x 1° grid cells.
TC50	(a) Annual probabilities of occurrence of tropical storms, hurricanes, and super typhoons (winds 67 m/s or greater) for the world by 5° x 5° grid cells (b) Mean forward velocities of tropical cyclones (without regard to tropical cyclone intensity) for the world by 5° x 5° grid cells.
HCSTATE	The number of hurricane strikes for the U.S. Atlantic and Gulf Coasts by state and Saffir-Simpson hurricane category.
XCNORTH	(a) Mean monthly and annual number of extratropical cyclogenesis for the Northern Hemisphere by 5° x 5° grid cells. (b) Mean monthly and annual number of extratropical cyclone occurrences for the Northern Hemisphere by 5° x 5° grid cells.
POLARLOW	Mean number of polar lows (polar air cloud vortices) per winter month for the North Pacific Ocean and Southern Hemisphere by 5° x 5° grid cells
LOWPC	(a) Mean and/or relative number of cyclones (without regard to cyclone type) for January, July and the year for the world by 5° x 5° grid cells. (b) Mean number of hours of cyclone occurrence (without regard to cyclone type) for January, July and the year for the Southern Hemisphere by 5° x 5° grid cells.
MONSOON	Derived index of the influence of winds on coastlines in the African, Asian and Australian monsoon regions by 1° x 1° grid cells.
SEAICE	Mean annual sea-ice concentrations for Alaskan and U.S. Atlantic coastal areas by 1° x 1° grid cells.